AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A circuit for driving a coil-armature device, comprising:

a first switch configured to selectively activate the circuit;

a pulse width modulation signal generator including an inverter and a feed-back loop configured to generate an input signal to said inverter based upon an output signal of said inverter;

a second switch, responsive to said pulse width modulation signal generator, that causes a driving voltage source to periodically energize the coil-armature device according to a duty cycle; and

a means for selectively providing a signal from said pulse width modulation signal generator to said second switch after a determined time has elapsed after activation of the circuit.

2. (Original) The circuit according to claim 1, wherein said elapsed time period corresponds to an amount of time required to sufficiently energize the coil-armature device such that the armature is attracted into a center of the coil.

3. (Original) The circuit according to claim 1, wherein said elapsed time period corresponds to a time required to charge a capacitor from a first charge level to a second charge level.

4. (Original) The circuit according to claim 1, wherein said means for selectively providing a signal from said pulse width modulation signal generator to said second switch comprises a NAND gate responsive to a first input signal and said pulse width modulation signal.

5. (Original) The circuit of claim 4, wherein said first input signal to said NAND gate is derived from a voltage level across a capacitor.

6. (Original) The circuit according to claim 4, wherein said first input signal has a first voltage level upon activation of said circuit, and wherein said first input signal changes to a second voltage level after said determined time period has elapsed.

7. (Original) The circuit according to claim 4, wherein said pulse width modulation generator is configured to alternatively provide a first voltage level that is greater than an upper threshold voltage of said NAND gate and a second voltage level that is less than a lower threshold voltage of said NAND gate.

8. (Canceled)

9. (Previously Presented) The circuit according to claim 1, wherein said input signal is dependent upon a voltage drop across a capacitor, said capacitor being periodically charged by said output signal of said inverter.

10. (Previously Presented) The circuit according to claim 1, wherein said inverter is a NAND gate configured as an inverter.

11. (Original) The circuit according to claim 1, further comprising a relay connected between said second switch and said means for selectively providing a signal from said pulse width modulation signal generator to said second switch.

12. (Original) The circuit according to claim 1, wherein said second switch is a transistor.

13. (Previously Presented) A circuit for driving a coil-armature device, comprising:

a first switch configured to selectively activate the circuit;

a second switch, responsive to a control signal, that causes a driving voltage source to periodically energize the coil-armature device according to one of a first duty cycle and a second duty cycle; and

an analog switch, responsive to a change mode signal, that causes a transition from said first duty cycle to said second duty cycle.

14. (Original) The circuit according to claim 13, wherein said second switch is a transistor.

15. (Original) The circuit according to claim 13, wherein:

said second switch is configured to periodically energize the coil-armature device according to said first duty cycle for a determined period of time sufficient to move the armature to a center of the coil, and

said second switch is configured to periodically energize the coil-armature device according to said second duty cycle subsequent to said period of time sufficient to move the armature to the center of the coil.

16. (Original) The circuit according to claim 13, further comprising a first comparator configured to generate said control signal in response to a comparison between a voltage signal indicative of an amount of energy stored in said coil-armature device and a first reference signal.

17. (Original) The circuit of claim 16, wherein said voltage signal indicative of an amount of energy stored in said coil-armature device is generated across a resistor connected in series with the coil-armature device.

18. (Original) The circuit of claim 16, wherein:

said first reference signal has a first voltage level during a time period sufficient to move the armature to a center of the coil, and

said first reference signal has a second voltage level subsequent to said time period sufficient to move the armature to the center of the coil.

19. (Original) The circuit of claim 16, wherein said first reference signal is generated from a voltage divider circuit.

20. (Previously Presented) The circuit of claim 19, wherein said voltage divider circuit is adjustable so as to be able to change said first reference signal in response to a said circuit mode signal.

21. (Previously Presented) The circuit of claim 19, wherein said voltage divider comprises a plurality of resistors, and wherein at least one of the resistors is configured to be electrically shorted from said voltage divider in response to a said circuit mode signal.

22. (Original) The circuit of claim 21, further comprising a second comparator that compares a second input signal to a second reference signal to generate said circuit mode signal.

23. (Original) The circuit of claim 22, wherein said second input signal is generated based on a voltage level across a capacitor.

24. (Original) The circuit of claim 23, wherein said capacitor is sized so that said second input signal exceeds said second reference signal after a determined time sufficient to move the armature to a center of the coil has elapsed.

25. (Original) The circuit of claim 22, wherein said second input signal is configured to exceed said second reference signal after a determined time sufficient to move the armature to a center of the coil has elapsed.

26. (Original) The circuit according to claim 16, further comprising a relay positioned between said first comparator and said second switch.

27– 34 (Canceled)

35. (Previously Presented) The circuit according to claim 16, further comprising a feedback capacitor connected in parallel to said first comparator and configured to prevent the interference of random oscillations generated by the operation of said first comparator.

36. (Currently Amended) ~~The circuit of claim 19~~ A circuit for driving a coil-armature device, comprising:

a first switch configured to selectively activate the circuit;

a second switch, responsive to a control signal, that causes a driving voltage source to periodically energize the coil-armature device according to one of a first duty cycle and a second duty cycle;

an analog switch, responsive to a change mode signal, that causes a transition from said first duty cycle to said second duty cycle; and

a first comparator configured to generate said control signal in response to a comparison between a voltage signal indicative of an amount of energy stored in said coil-armature device and a first reference signal;

wherein said first reference signal is generated from a voltage divider circuit;

wherein said voltage divider comprises a plurality of resistors; and

wherein at least one of the resistors is configured to be electrically shorted from said voltage divider in response to the closure of said analog switch.